

ABSTRACT OF THE DISCLOSURE

The present invention is a method and apparatus for a rotating, tunable, holographic drop filter connected to a fiber optic source. The filter uses a quasi phase-conjugate optical system for a drop-channel fiber coupling and WDM channels which are introduced to the system. The light from these channels is collimated and passed through a volume phase holographic material so that only one WDM channel is diffracted and the rest pass through the holographic material unaffected. A quasi phase-conjugate diffracted beam is generated by the optical system to reflect the diffracted channel back towards the holographic material.

The reflected light is Bragg matched to the holographic material so that it is re-diffracted along a path identical to the original incident light beam. A free-space circulator may be used to direct the diffracted beam to a fiber optic collimator, which is different from the fiber optic collimator of the incident light beam.